

**FM WRALC ROBINS AFB GA//LES//**

**TO:**

**HQ AFMC WRIGHT PATTERSON AFB OH//LGM//  
HQ USAF PENTAGON WASHINGTON DC//ILMM//  
HQ AFSOC HURLBURT FLD//LG/LGM//  
HQ ACC LANGLEY AFB ASG VA//LG/LGM//  
HQ AETC RANDOLPH AFB TX//LGM//  
HQ AFRC ROBINS AFB GA//LGM//  
HQ AFSPC PETERSON AFB CO//LGM//  
HQ AMC SCOTT AFB ILL//A44//  
HQ ANG ANDREWS AFB MD//LGM//  
HQ PACAF HICKAM AFB HI//LGM//  
HQ USAFE RAMSTEIN AB GE//LGM//  
OC ALC TINKER AFB OK//LGLUB//  
AFMETCAL DET 1/ MLEM  
WR ALC ROBINS AFB GA//LE//LEET//LES//LESG//**

**SUBJECT: INTERIM OPERATIONAL SUPPLEMENT T.O. 1-1-3S-5, DATED 17 FEBUARY 05.**

**1. THIS PUBLICATION SUPPLEMENTS T.O. 1-1-3 , DATED, 28 FEB 03, CHANGE 2, DATED, 28 NOV 03, TITLE: INSPECTION AND REPAIR OF AIRCRAFT INTEGRAL TANKS, AND FUEL CELLS. A SUITABLE REFERENCE TO THIS SUPPLEMENT WILL BE MADE ON THE TITLE PAGE OF THE BASIC PUBLICATION. THIS MESSAGE SUPERCEDES 1-1-3S-4, DATED 07 FEBUARY 05. THIS MESSAGE IS DIRECTED TO DEPOT AND AMARC. COMMANDERS ARE RESPONSIBLE FOR BRINGING THIS SUPPLEMENT TO THE ATTENTION OF ALL AFFECTED AF PERSONNEL. PLEASE PASS TO ACCESSORY FLIGHT CHIEFS, AIRCRAFT FUEL SYSTEMS REPAIR SECTION CHIEF AND PRECISION MEASUREMENT EQUIPMENT LABORATORY (PMEL)**

**MAJCOMS ARE RESPONSIBLE FOR RETRANSMITTING THIS IOS TO SUBORDINATE UNITS NOT INCLUDED AS ADDRESSED ON THIS MESSAGE.**

**2. DISTRIBUTION STATEMENT A - APPROVED FOR PUBLIC RELEASE; DISTRIBUTION IS UNLIMITED. OTHER REQUESTS FOR THIS DOCUMENT SHALL BE REFERRED TO WR-ALC/LEET, 460 RICHARD RAY BLVD, SUITE 221, ROBINS AFB, GA 31098-1640.**

**3. PURPOSE: THIS SUPPLEMENT IS ISSUED TO AMEND THE BASIC PUBLICATION. THIS MESSAGE IS TO OUTLINE THE REQUIREMENTS FOR ACQUISITION, CALIBRATION, AND USE OF THE MULTIRAE PID METER FOR AIRCRAFT FUEL SYSTEMS REPAIR.**

**4. INSTRUCTIONS: ON PAGE 9-15 NEW PARAGRAPH 9.15.**

**A. ACQUISITION:**

**1. THE AIR FORCE INSTITUTE OF OPERATIONAL HEALTH (AFIOH) HAS AUTHORIZED THE MULTIRAE PID (PGM-50) METER AS A REPLACEMENT FOR THE BACHARACH 514M. THE METER TAKES ADVANTAGE OF NEWER TECHNOLOGIES, IS MORE RELIABLE, AND PROVIDES FOR A SAFER WORKING ENVIRONMENT BY READING EXISTING VOLATILE ORGANIC COMPOUNDS (VOC) AT THE PARTS PER MILLION LEVEL OF CONCENTRATION.**

2. IT IS STRONGLY RECOMMENDED THAT UNITS BUDGET FOR, AND TRANSITION TO, THIS METER AS SOON AS POSSIBLE. THE COST OF THE PID METER IS APPROXIMATELY \$4500 PER KIT, IS UNIT FUNDED, AND MUST BE ORDERED VIA NSN 6665-01-457-0472 AND P/N 009-3001-01N. TO ENSURE TO A TIMELY TRANSITION FROM THE BACHARACH 514M TO THE PID METER, RECOMMEND FUEL SECTIONS IDENTIFY THEIR TOTAL METER REQUIREMENTS IMMEDIATELY AND WORK CLOSELY WITH THEIR LOCAL SQUADRON RESOURCE ADVISOR AND COMMANDER TO DEVELOP A REPLACEMENT SCHEDULE.

3. REQUEST UNITS REPORT TOTAL PID METER REQUIREMENTS TO THE THEIR RESPECTIVE COMMAND POC LISTED IN PARAGRAPH 6 NLT 28 FEB 05. COMMAND FUNCTIONALS WILL COMPILE THE INFORMATION AND PRIORITIZE UNIT REQUIREMENTS ON AN EXCEL SPREADSHEET AND ELECTRONICALLY SEND IT TO THE HQ ACC/LGMS POC, MSGT JEFFERY ABRAHAMSON. MSGT ABRAHAMSON WILL COORDINATE THIS LIST WITH THE MANUFACTURER.

4. THE BACHARACH 514M IS AUTHORIZED FOR USE UNTIL TRANSITION TO THE PID METER IS COMPLETE.

**B. CALIBRATION:**

1. THE MULTIRAE PID METER CALIBRATION REQUIREMENTS WERE FINALIZED WITH AFIOH AND HAVE BEEN INCLUDED IN THE 33K-100. ALL METERS (EXCEPT 29 UNITS PURCHASED BY ROBINS AFB, GA) PURCHASED TO DATE WERE DISTRIBUTED BY RAESYSTEMS, INC., CALIBRATED TO NAVY STANDARDS. THE DIFFERENCE IN CALIBRATION STANDARDS IS MINIMAL AND DOES NOT AFFECT THE SAFE OPERATION OF THE METER IN AN AIR FORCE ENVIRONMENT; HOWEVER, THE METER AS DELIVERED TO THE FIELD, DOES NOT CONFORM TO MINIMUM AFIOH-ESTABLISHED STANDARDS AND THEREFORE SHOULD NOT BE USED UNTIL PROPERLY CALIBRATED.

2. ALL PID METERS CURRENTLY IN USE SHALL BE TURNED INTO PMEL FOR VERIFICATION OF SETTINGS AND RECALIBRATION. DEPLOYED METERS SHALL BE TURNED IN TO PMEL AS SOON AS THEY RETURN TO HOME STATION. END USERS SHALL PROVIDE THE LOCAL PMEL WITH A COPY OF THE USERS MANUAL FOR USE DURING CALIBRATION.

3. EFFECTIVELY IMMEDIATELY, ALL NEWLY ACQUIRED MULTIRAE PID METERS SHALL BE SENT TO PMEL FOR INITIAL CALIBRATION IAW TECHNICAL ORDER 33K6-4-3483-1.

4. TO CONVERT THE MULTIRAE PID METER FROM NAVY TO AIR FORCE SETTINGS, PRECISION MEASUREMENT EQUIPMENT LABORATORIES MUST PURCHASE AN UPGRADE KIT FROM RAESYSTEMS, INC (<http://www.raesystems.com/index.html>). THE COST OF THE KIT IS MINIMAL AND GOVERNMENT IMPAC PURCHASE REQUESTS ARE ACCEPTED. THE UPGRADE KIT PART NUMBER IS P/N 008-0920-000 AND IT INCLUDES A COMPUTER COMMUNICATION CABLE, SOFTWARE, AND UPGRADE INSTRUCTIONS. TO PREVENT UNINTENTIONAL ADJUSTMENT OF CRITICAL CALIBRATION SETTINGS, METERS SHALL BE PASSWORD PROTECTED BY A PRECISION MEASUREMENT EQUIPMENT LABORATORY TECHNICIAN IAW THE COTS MANUAL. END-USERS ARE PROHIBITED FROM PURCHASING THE COMPUTER INTERFACE CABLE.

**C. METER USE:**

(NOTE)

IN ADDITION TO FUEL TANK ENTRY PROCEDURES OUTLINED IN THE 1-1-3 AND APPLICABLE WEAPONS SYSTEM TECHNICAL ORDERS, USE THE FOLLOWING

**GENERAL PROCEDURES UNTIL AN OPERATIONAL SUPPLEMENT OR CHANGE TO TECHNICAL ORDER 1-1-3 IS RELEASED:**

**1. GENERAL**

**TO PREVENT DAMAGE TO THE METER, KEEP IT AWAY FROM FUEL PUDDLES OR WETTING HAZARDS SUCH AS EXPLOSION SUPPRESSION FOAM, MANIFOLD OUTLETS, PUMP INLETS, ETC.**

**(A).THE PID METER SHALL BE USED AS A MONITORING DEVICE. AS A MINIMUM, RECORD PPM AND TIME-WEIGHTED AVERAGE (TWA) ON THE ENTRY PERMIT EVERY 4 HOURS.**

**(B). DURING EXPLOSION SUPPRESSION FOAM REMOVAL, IT SHALL REMAIN ON AND IN THE VICINITY OF THE ENTRANT AT ALL TIMES DURING FUEL TANK/CELL ENTRY, A READING SHALL BE TAKEN EVERY 15 MINUTES, AS A MINIMUM, OR MORE OFTEN AS DEEMED NECESSARY, AT THE FURTHEST POINT MAINTENANCE EXTENDS INTO THE FUEL TANK/CELL. (IF AN AIRCRAT HAS BEEN FLUID PURGED AND ITS PPM IS BELOW 600, READINGS MAY BE TAKEN EVERY FOUR HOURS OR MORE OFTEN AS DEEMED NECESSARY). IMMEDIATELY REMOVE THE METER FROM THE FUEL TANK/CELL AFTER EACH READING TO PREVENT DAMAGE TO THE METER AND THE CONTINUOUS SOUNDING OF THE ALARM. REPEAT THE SAMPLING PROCESS UNTIL ALL REQUIRED EXPLOSION SUPPRESSION FOAM IS REMOVED. RECORD EACH READING ON THE ENTRY PERMIT.**

**(C). ENSURE THE PID METER SERIAL NUMBER IS RECORDED ON THE ENTRY PERMIT. UPDATE SERIAL NUMBER INFORMATION AS METERS ARE CHANGED OUT DURING THE TASK.**

**2. GENERAL MONITORING PROCEDURES FOR EXPLOSION SUPPRESSION FOAMED FUEL TANK/CELL ENTRY**

**(A). DEFUEL AND DRAIN AIRCRAFT OR APPLICABLE TANK(S) AS DIRECTED BY THE APPLICABLE WEAPONS SYSTEM TECHNICAL ORDER.**

**(B). REMOVE FUEL CELL/TANK ACCESS DOOR AND PURGE IAW TECHNICAL ORDER 1-1-3.**

**(C). TAKE TANK ATMOSPHERE READING; ENSURE VOC READING IS 1200PPM OR LESS. IF ABOVE 1200PPM, CONTINUE PURGE AND RECHECK ATMOSPHERE EVERY 15 MINUTES UNTIL FIRE SAFE.**

**(D). REMOVE FOAM AND DEPUDDLE FUEL AS NECESSARY, EXIT FUEL CELL/TANK AND CONTINUE PURGE FOR 15 MINUTES.**

**(E). TAKE TANK ATMOSPHERE READING; ENSURE VOC READING IS LESS THAN 600PPM. IF ABOVE 600PPM, CONTINUE PURGE AND RECHECK ATMOSPHERE EVERY 15 MINUTES UNTIL ENTRY SAFE.**

**(F). MONITOR VOC DURING FUEL CELL/TANK REPAIR TO ENSURE 600 PPM OR LESS. VOC SHALL BE CHECKED AT THE BEGINNING OF EVERY SHIFT AND EVERY 4 HOURS, AS A MINIMUM, OR MORE OFTEN AS DEEMED NECESSARY.**

**3. GENERAL MONITORING PROCEDURES FOR NON-FOAMED FUEL TANK/CELL ENTRY**

**(A). DEFUEL AND DRAIN AIRCRAFT OR APPLICABLE TANK(S) AS DIRECTED BY THE APPLICABLE WEAPONS SYSTEM TECHNICAL ORDER.**

**(B). REMOVE ACCESS DOOR AND PURGE IAW TECHNICAL ORDER 1-1-3**

**(C). TAKE AN INITIAL TANK ATMOSPHERE READING; ENSURE VOC READING IS 600PPM OR LESS. IF ABOVE 600PPM, CONTINUE PURGE AND RECHECK ATMOSPHERE EVERY 15 MINUTES UNTIL ENTRY SAFE.**

**(D). MONITOR VOC DURING FUEL CELL/TANK REPAIR TO ENSURE 600 PPM OR LESS. VOC SHALL BE CHECKED AT THE BEGINNING OF EVERY SHIFT AND EVERY 4 HOURS, AS A MINIMUM, OR MORE OFTEN AS DEEMED NECESSARY.**

**D. THE MULTIRAE PID METER INCORPORATES A DATALOGGING FEATURE THAT CONTINUOUSLY RECORDS METER STATUS AND A MULTITUDE OF ENVIRONMENTAL CONDITIONS. IN THE EVENT OF AN ACCIDENT DURING FUEL CELL/TANK REPAIR THAT RESULTS IN PERSONNEL BECOMING INCAPACITATED OR A FIRE/EXPLOSION THAT COULD BE ATTRIBUTED TO FUEL SYSTEMS REPAIR OPERATIONS, IMMEDIATELY CONFISCATE ALL PID METERS USED DURING THE TASK AND TURN THEM INTO PMEL. PMEL WILL DOWNLOAD AND PRINT ALL DATALOGGING EVENTS RECORDED DURING THE PERIOD IN QUESTION AND PROVIDE THAT INFORMATION TO THE APPLICABLE INVESTIGATING OFFICE/TEAM.**

**E. FOR FURTHER QUESTIONS OR CONCERNS CONTACT: HQ ACC/LGMS POC IS MSGT JEFFERY ABRAHAMSON; HQ AMC/A44 POC IS MSGT JAMES CAMPBELL; HQ ANG/LGM POC IS MSGT MIKE TERWILLIGER; HQ USAFE/LGM POC IS MSGT DANNY MEDINAS; HQ PACAF/LGM POC IS SMSGT MICHAEL TUCKER; HQ AETC POC IS SMSGT XAVIER SIMMONS; HQ AFRC/LGMS POC IS SMSGT OLIVIU MUJA.**

**F. ON PAGE 1-3 PARAGRAPH 1.4.2.2.2. SUB-PARAGRAPH C. AFTER (QUALIFIED) INSERT "ALL CIVILIAN ENTRY AUTHORITY THAT USE FIRE DEPARTMENT AS FIRST LINE RESCUE ARE NOT REQUIRED TO BE RESPIRATOR QUALIFIED."  
“(DEPOT AND AMARC)”**

**5. POINT OF CONTACT IS MR. RAY COURINGTON, WR-ALC/LESIG, DSN 472-1357, EMAIL: HOLLIE.COURINGTON@ROBINS.AF.MIL**

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